Abstract

RESISTIVE TEMPERATURE DEVICE (RTD) MODULE WITH IMPROVED NOISE IMMUNITY

An RTD system includes multiple pluralities of RTDs and RTD bank assembly to which each plurality of RTDs are connected. Each RTD bank assembly includes a current source for the RTDs connected thereto, a multiplexer switching system for switching the current source successively between the RTDs, and a measurement function for measuring the voltage drop across the RTDs produced by the current source. The system includes a circuit for determining resistance of the RTD from the current applied thereto and the voltage drop there across. The system further includes a plurality of low pass filters associated, respectively, with each RTD, wherein the low pass filters are charged before the voltage measurement is made. The system includes a precharging arrangement where the low pass filter associated with the next RTD in a voltage sampling sequence is precharged, so that the delay between sampling of the voltage from the low pass filters associated with successive RTDs is significantly reduced. The system further includes low pass filters associated with calibration resistors which permit sampling of voltage values from the RTDs prior to the low pass filters associated therewith being fully charged, without error which would otherwise occur.